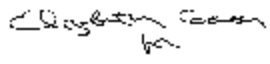




UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0073

MEMORANDUM FOR: The Record

DATE: October 6, 1998 

FROM: William Stelle, Jr., Regional Administrator, Northwest Region

SUBJECT: ESA Section 7 Consultation on NMFS' Issuance of Section 10
Directed Take Permit to the Corps of Engineers for the Operation of
the Elk Creek Dam Trap-and-Haul for the 1998/99 & 1999/00 Fish
Passage Seasons (consultation #OSB98-0073, National §7 #62).

Attached is the biological opinion prepared by the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act on NMFS' Issuance of a Section 10 Directed Take Permit to the Corps of Engineers for the Operation of the Elk Creek Dam Trap-and-Haul for the 1998/99 & 1999/00 Fish Passage Seasons, Rogue River Basin, Oregon.

As stated in the biological opinion, NMFS has determined that the proposed activity is not likely to jeopardize the continued existence of threatened SONC coho salmon, and is not likely to result in the destruction or adverse modification of its proposed critical habitat.

Attachments



Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Biological Opinion on Effects of Issuing an ESA Section 10 Permit to the Corps of
Engineers for Operation the Elk Creek Dam Trap-and-Haul for the 1998/99 &
1999/00 Fish Passage Seasons

Agency: Protected Resources Division, National Marine Fisheries Service (Northwest Region)

Consultation

Conducted By: Habitat Conservation Division, National Marine Fisheries Service (Northwest
Region)

Date Issued: October 6, 1998

Refer to: OSB1998-0073

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ATTACHMENT 1 Application of Endangered Species Act Standards (to listed West Coast anadromous salmonids)	

I. Background

The National Marine Fisheries Service (NMFS) has listed the Southern Oregon/Northern California coho salmon evolutionarily significant unit (SONC coho ESU) as a threatened species under the Endangered Species Act (ESA), and proposed critical habitat for this ESU (details provided in Table 1 below). This ESU includes the Rogue River and associated tributaries. NMFS proposes to issue a directed take permit to the Corps of Engineers (Corps) for the operation of the trap-and-haul facility at Elk Creek Dam during the fish passage seasons of 1998/99 & 1999/00. The objective of this biological opinion is to determine whether the issuance of a directed take permit by NMFS to the Corps for the operation of the Elk Creek Dam trap-and-haul during the 1998/99 & 1999/00 fish migration seasons is likely to jeopardize SONC coho, or result in the destruction or adverse modification of its proposed critical habitat.

In January 1998, the Corps proposed to partially remove the uncompleted Elk Creek Dam (located on Elk Creek 1.7 miles above its confluence with the Rogue River), and requested formal consultation under the ESA from NMFS. In response, a biological opinion for this proposed action was completed by NMFS on February 24, 1998. However, the proposed removal was not completed due to lack of funding support. This has resulted in the need to continue trap and haul for the 1998/99 & 1999/00 fish passage seasons for coho and steelhead. Adult salmonids are trapped below the dam and will be transported above the dam for release.

Table 1. Information on listing status and designated critical habitat, and references for biological information, environmental baseline, and historical population trends for the listed and proposed anadromous salmonids on the West Coast (noted chronologically by Federal Register publication dates).

Species (ESU)	Listing Status		Critical habitat (Final Rule)	Biological Information, Historical Population Trends
	Proposed Rule	Final Rule		
Snake River Sockeye Salmon		11/20/91 56 FR 58619	12/28/93 58 FR 68543	Waples <i>et al.</i> 1991a; Burgner 1991
Snake River Fall Chinook Salmon		4/22/92 57 FR 34653	12/28/93 58 FR 68543	Waples <i>et al.</i> 1991b; Healey 1991
Snake River Spring/Summer Chinook Salmon		4/22/92 57 FR 34653	12/28/93 58 FR 68543	Matthews and Waples 1991; Healey 1991
Sacramento River Winter Chinook Salmon		1/4/94 59 FR 440	6/16/93 58 FR 33212	115/93, 55 FR 46515 Healey 1991
Umpqua River Cutthroat Trout		8/9/96 61 FR 41514	1/9/98 63 FR 1338	Johnson <i>et al.</i> 1994; Trotter 1989
Central California Coho Salmon		10/31/96 61 FR 56138	N/A	Weitcamp <i>et al.</i> 1995; Sandercock 1991
Southern OR/Northern CA Coho Salmon		5/6/97 62 FR 24588	N/A	Weitcamp <i>et al.</i> 1995; Sandercock 1991
Southern California Steelhead		8/18/97 62 FR 43937	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
South-Central California Steelhead		8/18/97 62 FR 43937	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Central California Coast Steelhead		8/18/97 62 FR 43937	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Upper Columbia River Steelhead		8/18/97 62 FR 43937	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Snake River Basin Steelhead		8/18/97 62 FR 43937	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Lower Columbia River Steelhead		3/19/98 53 FR 13347	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
California Central Valley Steelhead		3/19/98 53 FR 13347	N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Oregon Coast Coho Salmon		8/10/98 63 FR 4258	N/A	Weitcamp <i>et al.</i> 1995; Sandercock 1991

Central Valley Spring Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Central Valley Fall Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Southern OR and CA Coastal Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Puget Sound Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Lower Columbia River Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Upper Willamette River Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Upper Columbia River Spring Chinook Salmon	3/9/98 63 FR 11482		N/A	Myers <i>et al.</i> 1998; Healey 1991
Upper Willamette River Steelhead	3/10/98 63 FR 11798		N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Middle Columbia River Steelhead	3/10/98 63 FR 11798		N/A	Busby <i>et al.</i> 1995; Busby <i>et al.</i> 1996
Hood Canal Summer Chum Salmon	3/10/98 63 FR 11774		N/A	Johnson <i>et al.</i> 1997; Salo 1991
Columbia River Chum Salmon	3/10/98 63 FR 11774		N/A	Johnson <i>et al.</i> 1997; Salo 1991
Ozette Lake Sockeye Salmon	3/10/98 63 FR 11750		N/A	Gustafson <i>et al.</i> 1997; Burgner 1991

II. Proposed Action

The "proposed action" is the issuance of a directed permit by NMFS to the Corps for continued operation of the Elk Creek Dam trap-and-haul for the 1998/99 & 1999/00 fish passage seasons. In fall 1992, due to concerns regarding passage of adult salmonids through the incomplete dam, the Corps funded the Oregon Department of Fish and Wildlife (ODFW) to trap and haul adult fish from the fish collection facilities at the base of the dam to a point above it. After the SONC coho listing in May 1997, ODFW was authorized by NMFS to operate this trap-and-haul during the 1997/98 adult fish migration season as an exception to the take prohibition (62 FR 38479). The exception was limited to the 1997/98 season because the Corps intended to have the removal completed before the 1998/99 season. Since the removal was not completed, a permit is necessary to operate the trap-and-haul in

1998/99 & 1999/00. As few adult fish will pass through the diversion tunnel at Elk Creek Dam, operation of the trap-and-haul is the only feasible method available to provide adult passage for the 1998/99 & 1999/00 seasons. The various components of the trap-and-haul operation that will be allowed by the proposed action (i.e., issuance of the permit by NMFS) are described below.

Tagging: Coho salmon longer than 30 cm will receive left and right opercle punches prior to release in Elk Creek. The purpose of applying this mark is to estimate the number of fish that pass downstream over the weir and are then trapped a second time. In addition, the opercle punch allows for evaluation of fish that do not precede upstream due to potential trapping stress and fallback to the trap unsuccessful spawners.

Method of Capture and Release: A fish collection facility located about 0.1 km downstream of Elk Creek Dam will operate continuously (7 days a week) from 15 October through mid-May except during holidays. On holidays, or during short periods of time (less than 30 hours) when ODFW staff are not available to monitor the trap, the water supply pump to the collection facility will be turned off so that fish cannot enter the trap reducing the likelihood of dewatering the facility. Personnel will be stationed at the facility when it is in operation to respond to emergency actions as a result of pump failure or plugging of the intake screen.

Fish will be transported twice daily during Monday through Friday and once daily over the weekend unless large numbers of coho and steelhead are observed. Trapped fish are crowded into a loading tower, which is then filled with water. A fish bail moves the fish to the top of the tower then fish are spilled into an aerated transport tank on a truck and transported to a release site about 1 km upstream of the project. Fish will then be anesthetized using MS-222, opercle punched, determine species and evaluated for tags, then placed in a recovery tank. Following recovery the fish will be release back into Elk Creek.

Anesthetic: It is anticipated that MS-222 will be used to anesthetize the adults prior to work up of the fish. Work on the Columbia River in capturing and handling adult salmonids suggest that using MS-222 prior to handling or netting the fish results in much less stress to the fish and reduces fallback and delay.

Holding Time: Adult fish will be held in the collection channel for a maximum of 30 hours. Adult fish will be held in the transport truck for a maximum of 40 minutes prior to release.

III. Biological Information and Critical Habitat

Information on listing status and proposed critical habitat for SONC coho is described in Table 1. Citations for information on the biological requirements, environmental baseline, and the historical population trends are also given in Table 1.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by the consultation regulations (50 CAR Part 402). Attachment 1 describes how NMFS applies the ESA jeopardy standards to consultations on Federal actions affecting the habitat of proposed/listed species. As described in Attachment 1, the first steps in applying the ESA jeopardy standards are to define the biological requirements of the ESU and to describe the listed species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (described in reports cited in Table 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species, or adversely modify or destroy designated critical habitat, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of SONC coho are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESU. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed/proposed ESU. This information is summarized in the literature cited in Table 1, and in Attachment 1.

B. Environmental Baseline

Current range-wide status of ESU under environmental baseline. NMFS described the current population status of SONC coho in its status review (Weitcamp et al. 1995) and in the SONC coho final listing rule (62 FR 24588, May 6, 1997). The fish counts at Gold Ray Dam (28 miles downstream on the mainstem Rogue River at river mile 126) provide the best quantitative source of information available on SONC coho abundance in the Rogue River Basin. However, for the purposes of this biological opinion, it is difficult to determine the population status for the environmental baseline assessment of the entire ESU based only on Gold Ray Dam fish counts because this dam is located on the Rogue River but the ESU occupies an area several times larger than the Rogue Basin. In the absence of adequate population data, habitat condition provides a means of evaluating the status of SONC coho for the environmental baseline assessment.

Action Area. The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” (50 CFR 402.02), thus the action area for this proposed action is the Elk Creek watershed.

Current status of proposed/listed ESU under environmental baseline within the action area. SONC coho adults returning to Elk Creek have been closely monitored since the installation of the trap-and-haul facility at Elk Creek Dam in 1992. Satterthwaite and Leffler (1997) summarized these returns and monitored SONC coho spawning distribution above the damsite by counting redds and determining presence/absence of coho fry. They found that the four year average (1993-94 to 1996-97) of SONC coho adults returning to the damsite was 9.2% (76-349 fish) of the annual SONC coho adults counted going over Gold Ray Dam 28 miles downstream on the mainstem Rogue River (756-3,516 fish). Coho redds and fry were found in Elk Creek and four of the five tributaries that were surveyed above the damsite, indicating wide distribution of coho adults.

Based on the best information available on the current status of the SONC coho throughout its range (see citations in Table 1) and within the action area, the information available regarding population status, population trends, and genetics (see Attachment 1), and the poor environmental baseline conditions within the action area, NMFS concludes that not all of the biological requirements of SONC coho within the action area are currently being met under the environmental baseline.

V. Analysis of Effects

A. Effects of Proposed Action. The issuance of the directed take permit by NMFS will allow the Corps to operate the Elk Creek Dam trap-and-haul facility during the 1998/99 & 1999/00 fish passage seasons. The effects of this proposed action are described below.

Potential for Injury or Mortality: Adult coho salmon can be injured or killed as fish are transferred from the fish trap to the transport tank and are sampled and marked prior to release. Adults have been injured and killed as the door on the elevator lift closes on fish crowded into the bay inside the elevator lift. Adults have also been injured when the brail floor of the elevator lift is not completely lowered prior to crowding fish. Project records suggest that 1-3 adult coho are injured or killed annually as a result of transfer to the transport truck. Operation changes have occurred as a result of these injuries to minimize any additional mortalities.

Adult coho salmon also have been injured when fish are dropped while being sampled for biological data and when gill filaments were clipped during application of the opercle punch. Project records on injuries of this type are incomplete but ODFW believe that an average of two adult coho are injured annually.

To minimize these potential adverse effects, fish will be transferred primarily when two staff members are present. This measure will be beneficial because one employee can operate the lift while the other

employee crowds the fish into the elevator lift. Also, while sampling and marking fish, one employee can concentrate solely on handling fish while the other records the data. In addition, the use of MS-222 should reduce handling stress to the fish.

Adult coho salmon may also be killed if they become dewatered as a result of loss of water to the collection channel. Water flow ceases when the intake pump shuts off. The pump shuts off then the intake screens become clogged with debris. Debris must be manually cleaned from the intake screens. In addition, an automated alarm sounds when the pump shuts off. Depending on the conditions of the intake, it is anticipated that the collection channel will dewater in 15 to 60 minutes. During operation of the system, having staff on station should reduce the level of risk. During nights when staff are not available, the pump system will be shutdown and the system dewatered.

Specific dates and Location of Take: Coho salmon enter the trap in Elk Creek between the last week of October and the middle of January. Location could occur at the fish collection facility or during transport.

Project Staff: ODFW personnel from the Cole M. Rivers Hatchery will operate and maintain the facility for the Corps. Some of the members on the hatchery staff have worked on Elk Creek Dam in previous years.

Transportation of Coho Salmon: Coho salmon will be transported in a portable fish tank by ODFW staff. Tank capacity is 300 gallons.

Travel Time to Release Site: Driving time to the release site is about 10 minutes. It is assumed that about 30 fish can be transported at a time. Based on handling and transport time, the last fish to be sampled will be in the tank about 45 minutes.

Holding Facilities: The fish collection facility serves as a holding pond for coho prior to transfer. The pond is 6 feet wide and 27 feet long. Water depth is about 4 feet when water is pumped into the trap.

Expected Numbers of Coho Salmon: Annual trap catches of coho salmon ranged from between 38 and 1053. ODFW anticipates coho returns to Elk Creek between these numbers. Coho salmon with fin clips will not be released upstream of Elk Creek Dam. Disposition of the hatchery fish will follow the same procedures as employed for excess hatchery fish collected at Cole M. Rivers Hatchery.

Expected Results of this Action: The trap-and-haul operation should provide positive benefits to coho salmon in the Elk Creek Basin, compared to not operating the trap-and-haul. Of course, project removal would result in superior fish passage at Elk Creek Dam to trap-and-haul, but removal is not possible until after the 1998/99 & 1999/00 fish passage seasons.

B. Effects of Interrelated Actions. Interrelated actions are defined as “those that are part of a larger action and depend on the larger action for their justification” (51 CFR §402 preamble). No interrelated actions were identified in this consultation as a result of the Partners Program.

C. Cumulative Effects. "Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation is all private land within the ranges of all proposed/listed anadromous salmonids in Oregon.

A substantial portion of spawning and rearing habitat for proposed/listed anadromous salmonids occurs within the action area. Gradual improvements in habitat conditions for these species are expected on Federal lands in western Oregon as a result of Northwest Forest Plan implementation, as guided by ESA consultation. Historically, agriculture, livestock grazing, forestry and other activities on non-federal land have probably contributed substantially to temperature and sediment problems in the action area. Significant improvement in proposed/listed anadromous salmonid reproductive success on non-federal land is unlikely without changes in agricultural, forestry, and other practices.

NMFS is not aware of any activities or changes to existing State and private activities within the action area that would cause greater impacts to listed or proposed ESU than presently occurs. In fact, now that these ESU are proposed or listed, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result take. For actions on non-Federal lands which the landowner or administering non-Federal agency believes are likely to result in adverse effects to proposed/listed species or their habitat, the landowner or agency should work with NMFS to obtain the appropriate section 7 incidental take authorization, or section 10 incidental take permit, which requires submission of a habitat conservation plan. If a take permit is requested, NMFS would likely seek project modifications to avoid or minimize adverse effects and taking of listed fish. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

The issuance of a directed take permit by NMFS to the Corps for the operation of the Elk Creek Dam trap-and-haul during the 1998/99 & 1999/00 fish migration seasons is not likely to jeopardize SONC coho, or result in the destruction or adverse modification of its proposed critical habitat.

VII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action

may affect the listed species in a way not previously considered; the action is modified in a way that causes an effect on the listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

VIII. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA and additional information requested by NMFS and provided by the six administrative units.

Satterthwaite, T.D. and R.R. Leffler. 1997. Rogue Basin Fisheries Evaluation: Effects of Elk Creek Dam on migratory salmonids in Elk Creek, annual progress report. Oregon Department of Fish and Wildlife, Portland, Oregon.

Weitcamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech Memo. NMFS-NWFSC-24, 258 p.

IX. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The action covered by this Biological Opinion will permit the directed take of some SONC coho due to the operation of the Elk Creek Dam trap-and-haul during the 1998/99 & 1999/00 fish migration seasons. Immediate mortality that results from trap and haul is estimated to average about one adult coho each year. In 1997/98 two female mortalities were observed by ODFW. The two mortalities were a result of the trapping or handling procedures. ODFW personnel recovered 44 carcasses of coho from the upstream side of the weir in 1997/98. Of these 44 coho, 22 were females and all but one had appeared to successfully spawn upstream of the dam. Possible sources of indirect take include coho salmon fry and yearlings impinged on the screen that guards the intake pump, and on the piles of debris on the weir. No impingement has been observed at either location through the years of sampling.

B. Reasonable and Prudent Measures

The level of anticipated take has been minimized as much as possible already for the 1998/99 & 1999/00 fish migration seasons, thus no reasonable and prudent measures are necessary.